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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,680	01/24/2002	Hiroshi Souda	2185-0613P	8419

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EXAMINER

SMALL, ANDREA D SOUZA

ART UNIT PAPER NUMBER

1626

DATE MAILED: 02/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/053,680

Applicant(s)

SOUDA ET AL.

Examiner

Andrea D Small

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6, 9 and 18-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-42 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

I. Applicants Response:

- (a) Applicant's response filed 11/27/2002 has been received and entered as paper no. 8.
- (b) Claims 4-5, 7-8 and 10-17 have been cancelled.
- (c) Claims 18-42 have been newly added.
- (d) Claims 1-3, 6, 9 and 18-42 are pending.

II. Remarks:

- (a) Rejection under 35 USC 103(a):

Original claims 1-10 and 13-15 under 35 USC 103(a) as being obvious of JP 11-228491 (JP '491) in view of Ishihara, et al (Ishihara).

The gist of the Applicants traversal of the rejection is that

- (a) the secondary reference, Ishihara, does not disclose the primary references limitations, notably, the use of zirconium compounds in a condensation reaction between carboxylic acids and alcohols, in a positive sense. To support this assertion, Applicants point to table 1 of the Ishihara reference, notably the Zr(OEt)₄ compound that provides low yields; and
- (b) Applicants also provide a supplemental reference, Dimmock, et al, stating that the teaching of that reference indicate that employment of a Zirconium compounds "are harmful to a cyclopropane compound", thus indicating that a person of ordinary skill in the art would not apply a catalyst of Zirconium in a cyclopropane reaction.

The examiner respectfully disagrees with both arguments.

First, Ishihara does teach employing Zirconium compounds to catalyze a condensation reaction between carboxylic acids and alcohols in a positive light. Tables 1 on page 1140 shows

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that Zirconium compounds have a high yield, especially when employing a Zirconium compound as instantly contemplated to catalyze the reaction. See table 1, ZrCl₄ yeild %. This showing indicates to one of ordinary skill that Zirconium compounds may be used to catalyze a condensation reaction between acids and alcohols to produce esters as is also instantly claimed. The Ishihara reference does compensate for the limitations of JP '491 with a positive teaching providing one of ordinary skill in the art with the expectation that modifying the reaction taught in JP '491 by employing the catalyst taught by Ishihara would yield good results.

Second, The Dimmock reference provided by Applicant does not diminish the teachings of JP '491 and Ishihara, as the Dimmock reference is drawn to a non-analogous reaction. The instant claims are drawn to a condensation reaction between an acid and an alcohol and not to a ring opening reaction. Additionally, the yield percentages disclosed in Ishihara and those disclosed in the examples provided in the specification are not 100%, thereby allowing for some side reactions that may take place, such as ring openings. The Dimmock reference does not provide a negative teaching of employing a Zirconium compound to catalyze a reaction between an acid and an alcohol.

Thus, the rejection under 35 USC 103(a) is maintained and now applies to claims 1-3, 6 and 9.

III. Maintained Rejections:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diachi, Pharm. Co, (JP 11-228491) as applied to claims 1-3, 6 and 9 above, and further in view of Ishihara, et al.

Applicants claim a process for preparing cyclopropanecarboxylate from a cyclopropane acid and alcohol in the presence of a group 4 metal catalyst.

Determination of the scope and content of the prior art (MPEP §2141.01)

(a) Diachi teaches a method of producing a cyclopropane carboxylate from a cyclopropane acid and alcohol in the presence of an acid catalyst. See page 1 of translation, paragraph [0021].

(b) Ishihara, et al teaches that direct condensation of carboxylic acids with alcohols to carboxylates in high yield may be achieved by employing a group 4 metal catalyst such as Hafnium, Zirconium, etc. See page 1140, 1st and 2nd columns.

Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)

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The difference between the prior art and the instant claims is that the Diachi reference does not teach the process of cyclopropanecarboxylate from an cyclopropane acid and alcohol **in the presence of a group 4 metal catalyst.**

Finding of prima facie obviousness---rationale and motivation (MPEP §2142-2413)

However, it would have been prima facie obvious for one of ordinary skill in the art at the time of the filing of the instant application to be motivated to employ the process as disclosed by Diachi and modify it by reacting the acid with the alcohol in the presence of a group 4 metal catalyst such as Zirconium as disclosed by Ishihara, with the expectation of obtaining a higher yield of carboxylate as is suggested by Ishihara.

IV. Allowable Claims:

Claims 18-42 are allowable.

V. Finality:

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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VI. Salutation:

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrea D. Small, whose telephone number is (703) 305-0811. The examiner can normally be reached on Monday-Thursday from 8:30 AM - 7:00 PM.

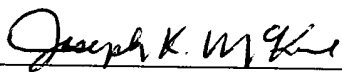
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Joseph K. McKane, can be reached at (703) 308-4537. The Unofficial fax phone number for this Group is (703) 308-7921. The Official fax phone numbers for this Group are (703) 308-4556 or 305-3592.

When filing a FAX in Technology Center 1600, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communications with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [Joseph.McKane@uspto.gov]. All Internet e-mail communications will be made of record in the application file. PTO employees will not communicate with applicant via Internet e-mail where sensitive data will be exchanged or where there exists a possibility that sensitive data could be identified unless there is of record an express waiver of the confidentiality requirements under 35 U.S.C. 122 by the applicant. See the Interim Internet Usage Policy published by the Patent and Trademark Office Official Gazette on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-1234

Andrea D. Small, Esq.
February 20, 2003



Joseph K. McKane
Supervisory Patent Examiner
Art Unit 1626
Technology Center 1